STATE FOREST LAND
ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decided whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/ watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at http://www.dnr.wa.gov under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered " does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

   Timber Sale Name: **SIDE WAY** *Agreement #:* **30-084400**

2. Name of applicant: **Washington Department of Natural Resources**

3. Address and phone number of applicant and contact person:

   Pacific Cascade Region
   P.O. Box 280
   601 Bond Road
   Castle Rock, WA 98611
   Contact Person: Robert W. Johnson
   Phone# (360) 577-2025

4. Date checklist prepared: **03/30/2009**

5. Agency requesting checklist: **Washington Department of Natural Resources**

6. Proposed timing or schedule (including phasing, if applicable):

   a. *Auction Date:* **November 19, 2009**
   b. *Planned contract end date (but may be extended):* **November 31, 2011**
   c. *Phasing:* **None**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

   Timber Sale

   a. *Site preparation:*

      Aerial herbicide spraying and slash piling site prep may be used to ensure that planting can be achieved at acceptable stocking levels that meet or exceed Forest Practices standards.

   b. *Regeneration Method:*

      Hand planting following harvest.

   c. *Vegetation Management:*

Treatment will be based on vegetative competition, and will ensure a free-to-grow status that complies with Forest Practice standards. Vegetation management needs will be assessed from plantation ages 3 to 8. Vegetation control activities will occur as needed.

d. *Thinning:*

As needed to meet desired density, stocking, species diversity, and growth. Pre-commercial thinning needs will be assessed at approximately 15 years of age. Commercial thinning potential will be assessed at approximately 25 years of age.

Roads: **Routine road maintenance, periodic ditch and culvert cleaning as necessary. Construction, reconstruction and abandonment are associated with forest management activities.**

Rock Pits and/or Sale: **The Low Bank Quarry located in Section 15 of Township 17 North, Range 04 West of W.M. will be used for future road construction activities associated with forest management operations.**

Other: **Firewood permits for the sale area may be available to the public if, after harvest, downed wood is plentiful near roadsides. Landing debris may be burned or chipped following harvest activities.**

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☒*303 (d) – listed water body in WAU:* ☒*temp* ☐*sediment* ☒*completed TMDL (total maximum daily load):* **Note: In the Upper Chehalis/Cedar Creek WAU, 303(d) waters were identified for both temperature and TMDL from data taken in 1998. The map dated 2008 provided by DOE at their web site** (http://apps.ecy.wa.gov/wqawa/viewer.htm) **no longer identifies the streams as 303(d) listed for the Upper Chehalis/Cedar Creek WAU.**
☐*Landscape plan:*
☐*Watershed analysis:*
☐*Interdisciplinary team (ID Team) report:*
☒*Road design plan:* **Available at Pacific Cascade Region Office.**
☐*Wildlife report:*
☐*Geotechnical report:*
☐*Other specialist report(s):*
☐*Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):*
☒*Rock pit plan:* **Available at Pacific Cascade Region Office.**
☒*Other:* **Policy For Sustainable Forests (PSF) dated December 2006; State Soil Survey; Washington State Department of Natural Resources Habitat Conservation Plan (HCP) dated September 1997; South Coast Planning Unit Marbled Murrelet Habitat Reclassification Map, dated November 1999; ESA listed Salmonid Species Map from Forest Practices, dated 1999; RMAP # 250214 Available at Pacific Cascade Region Office.**

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None known.

10. List any government approvals or permits that will be needed for your proposal, if known.

☒*HPA* **Blanket HPA 103081-1 for tailholds.** ☒*Burning permit* **(if piles are burned)** ☐*Shoreline permit*
☒*Incidental take permit* **1168 and PRT812521** ☒*FPA#* **2919791**
☐*Other:*

11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. *Complete proposal description:*

Side Way is a two-unit timber sale located in the Upper Chehalis/Cedar Creek WAU. Low Bank Quarry will be used as the primary source of rock for this proposal. This proposal will use both ground-based and cable systems. The units may contain poles.

Units	Proposal Acres	RMZ Acres	Sale Acres	Leave Tree Acres	Existing Road Acres	Harvest Acres
1	103	18	85	7	1	77
2	82	21	61	5	0	56
Total	185	39	146	12	1	133

b. *Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.*

Pre-harvest: **Timber types in the units are dominated by 67 to 81-year-old Douglas-fir mixed with western hemlock western redcedar, grand fir, red alder and bigleaf maple. Salal, Oregon grape, vine maple, red huckleberry, elderberry and sword fern are scattered throughout the units with salmonberry and devil's club found in the wet areas.**

Type of Harvest: **This proposal involves a variable retention harvest of 133 acres.**

Overall Unit Objectives: **The overall objectives for this proposal includes generating revenue for the trusts through the production of saw logs, poles and pulp material while manipulating the stand to maintain wildlife habitat by developing vertical stand structure and age class distribution in the future stand.**

c. *Road activity summary. See also forest practice application (FPA) for maps and more details.*

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		2,767	1.8	0
Reconstruction		0		0
Abandonment		0	0	0
Bridge Install/Replace	0			0
Culvert Install/Replace (fish)	0			0
Culvert Install/Replace (no fish)	0			

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. *(See timber sale map available at DNR region office, and/or color landscape/WAU map on the DNR website http://www.dnr.wa.gov under "SEPA Center.")*

a. Legal description:

Unit 1 is located in Section 5 of Township 16 North, Range 04 West of W.M.

Unit 2 is located in Sections 4 and 5 of Township 16 North, Range 04 West of W.M. and Sections 32 and 33 of Township 17 North, Range 04 West of W.M.

Low Bank Quarry is located in Section 15 of Township 17 North, Range 04 West of W.M.

b. Distance and direction from nearest town (include road names):

From Oakville take State Highway 12 North and turn East (right) 0.4 miles North of mile post 33 onto the D-Line. Travel on the D-Line for 2 miles and turn North (right) on the D-1000. Travel on the D-1000 for 2.8 miles to Unit 1 located both East and West of the D-1000. To access Unit 2 continue traveling North on the D-1000 for 0.7 miles and turn East (right) on the D-1200. Travel on the D-1200 for 0.2 miles to Unit 2 located East of the D-1200. To access Low Bank Quarry continue traveling North on the D-1000 for 4.8 miles and turn North (right) on the C-Line. Travel on the C-Line for 2.2 miles to Low Bank Quarry located on both sides of the C-Line.

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website http://www.dnr.wa.gov under " SEPA Center.")

WAU Name	WAU Acres	Proposal Acres
Upper Chehalis/Cedar Creek	26,229	185

Sub-Basin Name	Sub Basin Acres	Proposal Acres
Sub-Basin # 3	1,814	94
Sub-Basin # 4	2,626	27
Sub-Basin # 7	6,436	64

13. Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website http://www.dnr.wa.gov under "SEPA Center" for a broader landscape perspective.)

The uplands are mainly managed for timber production. Ownership includes small private forest landowners and DNR managed forests. Forest stands within the WAUs appear to be almost exclusively second and third growth stands. The number of currently active and recently expired Forest Practice Applications shown on the WAU map (referenced above on the DNR website) along with personal observations within the WAU indicates the forests appear to be managed for production of wood products. Management includes regeneration harvest, thinning, and partial cuts.

The following table is an estimated summary of past and future activity on DNR-managed land and privately managed land in the WAUs (information is based off of Forest Practices applications that have been approved in the last seven years compiled by the Department's GIS database). No attempt was made to predict future timber harvest on private ownerships within the WAU. The source of this information only provided the acreage on the WAU level.

UPPER CHEHALIS/CEDAR CREEK WAU	WAU ACRES/SUB-BASIN ACRES	ACRES OF EVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF UNEVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	PROPOSED ACRES OF EVEN-AGED HARVEST IN THE FUTURE	PROPOSED ACRES OF UNEVEN-AGED HARVEST IN THE FUTURE
DNR MANAGED LAND	24,348	1,790	282	441	0
PRIVATE OWNERSHIP	1,881	168	0	UNKNOWN	UNKNOWN
TOTAL	26,229	1,958	282	UNKNOWN	UNKNOWN

Note: 152 Acres were salvaged on non-DNR land.

Upper Chehalis/Cedar Creek Sub-basin # 3: this sub-basin is composed of 1,814 acres. In this sub-basin, the closest regeneration harvest to Unit 2 is a 40-acre plantation of 5-year-old reproduction adjacent to the western boundary. Additional stands within the WAU will be selected for regeneration, thinning and partial cut harvests in the future.

Upper Chehalis/Cedar Creek Sub-basin # 4: this sub-basin is composed of 2,626 acres. In this sub-basin the closest regeneration harvest to Unit 1 is a 37 acre plantation of 6-year old reproduction approximately 400 feet to the northwest. Additional stands within the WAU will be selected for regeneration, thinning and partial cut harvests in the future.

Upper Chehalis/Cedar Creek Sub-basin # 7: this sub-basin is composed of 6,436 acres. In this sub-basin the closest regeneration harvest to Unit 1 is a 39 acre plantation of 6-year old reproduction approximately 100 feet to the southwest. Additional stands within the WAU will be selected for regeneration, thinning and partial cut harvests in the future.

In addition: Effects of past management practices have not likely increased the peak flows of surrounding streams, the frequency of mass wasting events, or caused a significant increase in sedimentation. To reduce the possibility that this proposal may contribute to an increased chance of environmental impact, several mitigation measures have been included in the proposal. To ensure soil protection, soils exposed during road construction will be seeded with grass and/or straw. Ground based equipment may be restricted to slopes less than 35% and operations suspended during saturated soil conditions. Boundaries of the units along streams were located away from any over-steepened slopes. Haul routes for this proposal have also been evaluated for potential impact to the environment. To assure sediment delivery is controlled during active haul, cross drains, sediment ponds, and ditch-outs will be used to disconnect ditch water from live streams. Ditch water will be routed to the forest floor for filtering prior to entering streams. Moreover, new road construction has been concentrated mainly along ridge top locations and designed to a higher standard than road construction in the past.

Furthermore, to provide structural diversity for wildlife habitat, maintain fish habitat, and limit possible effects to aesthetic appearances, individual leave trees and leave tree clumps have been identified for retention throughout the proposal. Riparian Management Zones (RMZs) will be maintained along type 3 and type 4 streams. The RMZs will help reduce potential sedimentation, provide a source of large woody debris (LWD) to streams, maintain shade, reduce the aesthetic impact, maintain fish habitat (including potential Bull Trout habitat) and provide habitat for wildlife. Wildlife reserve and legacy trees will be retained throughout the proposal to provide structural diversity for wildlife habitat. In addition, these stands will be managed in a manner to maintain site productivity and water quality of adjacent streams.

Logging operations will be conducted in such a manner as to avoid severe ground disturbance. RMZs, leave trees and the 30-foot Equipment Limitation Zone (ELZs) on type 5 streams will help limit ground disturbance, provide filtration, and protect stream integrity. Lead end suspension will be required on all cable settings, to minimize sediment delivery to streams. The units will be planted upon completion of logging.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

☐Flat, ☐Rolling, ☒Hilly, ☐Steep Slopes, ☐Mountainous, ☐Other:

1) General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).

The Upper Chehalis/Cedar Creek WAU ranges from approximately 35 to 2,657 feet in elevation and generally consists of hilly topography with moderate to steep slopes and numerous incised draws. Approximately 5% of the slopes in the WAU are over 65%. The WAU receives approximately 45 to 60 inches of precipitation annually, the majority of which falls as rain. The primary timber type is Douglas-fir with red alder dominating the draws and lowlands. Secondary species include bigleaf maple, western redcedar and western hemlock. The WAU is located in the western hemlock vegetation zone.

2) Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).

The vicinity of the proposal matches the general description of the WAU or sub-basin(s).

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope is 65%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

State Soil Survey #	Soil Texture or Soil Complex Name	% Slope	Acres	Mass Wasting Potential	Erosion Potential
5670	CLAY LOAM	8-30	91	INSIGNIFIC'T	MEDIUM
5671	CLAY LOAM	30-65	55	LOW	HIGH

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

1) Surface indications:

Yes, there are surface indications of instability on slopes greater than 65% and/or within the RMZs.

2) Is there evidence of natural slope failures in the sub-basin(s)?
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*

There are indicators of high probability of slope instability within Unit 2 identified using the DNR slope stability GIS model. These areas were primarily associated with the RMZ around North Creek. An onsite evaluation by a slope stability specialist determined the area to be low risk for mass wasting. Lead end suspension will be required where cable operations are used in an effort to minimize soil disturbance.

There are indicators of shallow slope failures in several places in the sub-basins. These are generally associated with the slopes greater than 65% found most commonly within the RMZs, along the toes of slopes located within the the main draws, within hollows that extend as far up as mid-slope, and/or within headwalls at the tops of the steeper draws.

3) *Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?*
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*
Associated management activity:

Within the sub-basins, some shallow-rapid side cast failures associated with roads have occurred, mostly where roads were constructed prior to the Forest Practices Act and where roads utilizing side-cast construction techniques are located mid-slope on steep side slopes.

4) *Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?*
☒*No* ☐*Yes, describe similarities between the conditions and activities on these sites:*

5) *Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.*

RMZ's along the type 3 and 4 streams and 30 foot Equipment Limitation Zones along type 5 streams protect the steeper slopes that are generally found adjacent to streams. Roads will be crowned, ditched and cross-drained. Ground tracked harvesting may be seasonally restricted and restricted to slopes less than 35%. Lead end suspension shall be required on all cable settings. Most roads are located on or near ridge tops to avoid impacting streams.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: **1.8** *Approx. acreage new landings:* **2** *Fill source:* **Native**

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Incidental erosion may occur resulting from the harvesting of logs and to the soils that are exposed during and after road construction; however prudent road location, construction and maintenance as well as yarding restrictions (see B.1.d.5 above) will minimize erosion.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*

Approximately 1% of the site will be covered with gravel roads at the completion of the harvest.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.)

The harvest area is designed to minimize impacts to soil. Roads are located on or near ridge-tops to maximize the distance between the roads and streams. Roads will be constructed during dry weather conditions. Storm water runoff will be collected by road ditches and diverted through cross-drain culverts and ditch-outs onto the forest floor. Culverts and ditch-outs will be placed to minimize the amount of ditch water that may flow directly into stream channels. Energy dissipaters are placed at culvert outlets to reduce sedimentation and control erosion. Grass seed and straw bales may be placed on the exposed areas to prevent and control soil erosion. Periodic inspection and maintenance of forest roads used in harvest activities will help ensure proper drainage and minimize erosion.

Logging operations will be conducted in such a manner as to avoid severe ground disturbance. RMZs and leave trees will help limit ground disturbance, provide filtration and protect stream integrity, maintain slope stability, and protect water quality on all type 3 and type 4 streams (see 3.a.1.b.). The 30-foot Equipment Limitation Zone on all type 5 streams will provide additional protection. Lead end suspension will be required on all cable settings. Forest road layout will minimize yarding distances and yarding shall be suspended if soil rutting becomes excessive. Operations of this sale may be temporarily suspended when there is the possibility of sediment being delivered to streams. Shovel yarding will be restricted during saturated soil conditions to prevent soil damage. The units will be replanted after the completion of harvest operations.

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust *from truck traffic, rock mining, crushing or hauling*, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Minor amounts of engine exhaust from logging and road construction equipment and dust from vehicle traffic on roads will be emitted. If landing debris is burned after harvest is completed, wood smoke will be generated. There will be no emissions once the burning is complete.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

If landing debris is burned, it will be in accordance with Washington State's Smoke Management Plan. A burn permit will be obtained before burning occurs.

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. *(See timber sale map available at DNR region office, or forest practice application base maps.)*

Yes; Unit 1 has type 3 and 5 streams within the unit or in the immediate vicinity of the site which flows into Shelton Creek and type 3 and 5 streams within the unit or in the immediate vicinity of the site which flows into Cedar Creek. Shelton Creek flows into Cedar Creek which flows into the Chehalis River.

Unit 2 has type 4 streams within the immediate vicinity of the site which flow into North Creek, a type 3 stream, which creates the eastern border of the unit. North Creek flows into Cedar Creek which flows into the Chehalis River.

a) Downstream water bodies:

North Creek and Shelton Creek flow into Cedar Creek which flows into the Chehalis River. The Chehalis River empties into Grays Harbor which is connected to the Pacific Ocean.

b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Stream	3	4	192
Stream	4	2	100
Stream	5	7	0

c) List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.

RMZs for this proposal are designed in accordance with the Department's HCP procedures and their stream type identified by the streams' physical characteristics. This sale has a projected 100-year site index of 192. RMZs average 192 feet wide along all type 3 streams and a minimum of 100 feet wide along the type 4 streams. There is a 30 foot equipment limitation zone on all type 5 streams. Local knowledge of prevailing wind direction and observation of standing trees in nearby RMZs in recently harvested units determined no wind buffers were necessary.

2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.
☐*No* ☒*Yes (See RMZ/WMZ table above and timber sale map available at DNR region office.)*
Description (include culverts):

Cable lines may be suspended over type 3, 4 or 5 streams. An effort will be made to fall trees away from streams. Due to safety and operational constraints, felling and bucking may take place in or over type 5 streams. Logs may be yarded across the streams. The 30 foot ELZ will be observed. Water bars or other mitigation measures will be installed if greater than 10% of the soil is exposed within the zone. Trees may be cut and left in place within RMZs for safety or operational needs.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Not applicable.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. *(Include diversions for fish-passage culvert installation.)*
☒*No* ☐*Yes, description:*

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
☒*No* ☐*Yes, describe location:*

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
☒*No* ☐*Yes, type and volume:*

7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?

The potential for surface and/or mass erosion exists in the headwaters of the WAU's, typically on tightly convergent slopes and headwalls with 65% slope or greater and/or where unstable soils are present. A majority of these sites occur near watercourses with deeply incised channels and steep headwall areas. A storm event could result in eroded material entering surface water. The potential for eroded material to enter surface water based on this proposal is low due to erosion control measures that will be included in the proposal. Furthermore, the terrain in the WAU is heavily vegetated and limits the occurrence of soil erosion; therefore, it is unlikely that a significant amount of eroded material will enter surface water.

8) Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?
☐*No* ☒*Yes, describe changes and possible causes:*

Many streams experienced high flows during the storms of December 2007 and January 2009 resulting in channel scour, deposition, and changes in channel locations.

9) Could this proposal affect water quality based on the answers to the questions 1-8 above?
☒*No* ☐*Yes, explain:*

10) What are the approximate road miles per square mile in the WAU and sub-basin(s)?

There are 5.9 road miles per square mile in Upper Chehalis/ Cedar Creek WAU. The majority of this WAU is managed for forest products. Topography limitations, restrictions on harvest unit size and

distribution of harvests throughout the WAU necessitate the construction and maintenance of a high number of road miles per square mile. The approximate road miles per square mile in the sub-basins are unknown.

Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?
☒*No* ☐*Yes, describe:*

11) *Is the proposal within a significant rain-on-snow (ROS) zone? If not,* ***STOP HERE*** *and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.*
☒*No* ☐*Yes, approximate percent of WAU in significant ROS zone.*
Approximate percent of sub-basin(s):

12) *If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?*

13) *Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?*
☐*No* ☒*Yes, describe observations:*

Within the Upper Chehalis/ Cedar Creek WAU, and within sub basins 3, 4, and 7, many streams experienced high flows during the storms of December 2007 and January 2009 resulting in channel scour, deposition, and changes in channel locations.

14) *Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.*

Past, current, or reasonably foreseeable proposals may slightly change the timing, duration, and/or amount of peak flow, and flow rates may increase slightly during low flow periods due to decreased transpiration and interception. However, the unit size, RMZ's and green-up policies should limit contributions to peak flow problems.

15) *Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?*
☒*No* ☐*Yes, possible impacts:*

16) *Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.*

Establishing RMZs along type 3 streams and type 4 streams will help maintain bank stability and supply large organic debris, which helps control the rate of stream flow. Maintaining unit sizes less than 100 acres and providing for green-up before harvesting adjacent DNR stands will help decrease potential peak flow/flooding impacts. The road locations, unit size and RMZs will prevent impacts to down stream surface water rights.

b. Ground *Water*:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

Relief culvert drainage may increase ground water recharge directly below culvert outlet.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Minor amounts of oil, fuel and other lubricants may inadvertently be discharged to the ground as a result of heavy equipment use or mechanical failure. No lubricants will be disposed of on-site. All spills are required to be contained and cleaned-up. This proposed activity is expected to have no impact on ground water.

3) *Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?*
☐*No* ☒*Yes, describe:*

The Department of Ecology lists a well in Section 8 Township 16 North, Range 04 West. Changes in the volume and duration of water penetrating the soil could affect users, however due to mitigation measures that will be applied to this proposal, minimal affects on the previously mentioned resources are anticipated.

a) *Note protection measures, if any.*

No specific protection measures were incorporated into this proposal to protect these resources beyond those described in B.1.d.5. and B.3.a.1.c.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Storm water runoff from roads and intercepted sub-surface flow will be collected by road ditches and ditch-outs and diverted onto the forest floor. Ditch-outs and cross-drain culverts will be placed to minimize the amount of ditch water directly entering existing stream channels

2) Could waste materials enter ground or surface waters? If so, generally describe.

There is potential for logging slash to enter any of the type 3, 4 or 5 streams. Insignificant amounts of oil and other lubricants could be inadvertently discharged as a result of heavy equipment use; however, the potential to deliver oil and lubricants to a stream is low. All spills are required to be contained and cleaned-up.

a) Note protection measures, if any.

Slash may be removed from flowing streams at the direction of the Contract Administrator and as required by the HPA. Equipment use will be limited along streams in accordance with Forest Practice rules. No Lubricants will be disposed of on site. In the event of a lubricant spill, the Purchaser will contact DNR and the Department of Ecology.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.

4. Plants

a. Check or circle types of vegetation found on the site:

☒deciduous tree: ☒alder, ☒maple, ☐aspen, ☐*cottonwood,* ☐*western larch,* ☐*birch,* ☐other:
☒evergreen tree: ☒*Douglas fir,* ☒*grand fir,* ☐*Pacific silver fir,* ☐*ponderosa pine,* ☐*lodgepole pine,* ☒*western hemlock,* ☐*mountain hemlock,* ☐*Englemann spruce,* ☐*Sitka spruce,* ☒*red cedar,* ☐*yellow cedar,* ☐other:
☒shrubs: ☐*huckleberry,* ☒*salmonberry,* ☒*salal,* ☒*other:* **Oregon Grape, vine maple**
☒grass
☐pasture
☐crop or grain
☒wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☒skunk cabbage, ☒*devil's club,* ☐other:
☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☒other types of vegetation: **sword fern**
☐*plant communities of concern:*

b. What kind and amount of vegetation will be removed or altered? *(See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)*

All conifer and hardwood trees, except the wildlife leave trees, green recruitment trees and the vegetation within the RMZs will be removed as part of this harvest proposal. Under story vegetation will be disturbed and/or reduced within the proposed harvest area as a result of timber felling, bucking, yarding and site prep operations. Most of the vegetation will re-establish after the harvest is completed.

1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: http://www.dnr.wa.gov under "SEPA Center.")

Unit 1: to the north is Douglas-fir origin years 1990 and 2004; to the west is Douglas-fir origin years 2004 and 1993; to the south is Douglas-fir origin years 1929 and 1942; to the east is Douglas-fir origin years 1928, 1990 and 2004.

Unit 2: to the north is Douglas-fir origin year 2004; to the west is Douglas-fir origin year 2004; to the south is Douglas-fir origin year 2004; to the east is Douglas-fir origin year 1928.

2) Retention tree plan:

A combination of Douglas-fir, western red cedar, western hemlock, big leaf maple and red alder were left for green tree retention and snag recruitment. Reserve tree numbers were based on leaving eight trees per acre. In unit 1, a minimum of 680 trees were left. In unit 2, a minimum of 364 trees were left and 124 trees will be marked for retention by the purchaser. Trees will be left in clumps. This type of leave tree pattern will be conducive to a safe harvest operation, additionally it will distribute habitat throughout the proposal. Wildlife trees were left in areas to protect snags, large down logs, advanced regeneration and type 5 streams. Large structurally unique green trees with split or broken tops and large limbs suitable for wildlife, as well as snag recruits and very large diameter trees were favored as leave trees. Individual trees or clumps within the sale area may be relocated to facilitate safety and/or operational needs.

c. List threatened or endangered *plant* species known to be on or near the site.

None found in data base search.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

RMZs along type 3 and 4 streams along with individual and clumped leave trees will preserve native vegetation and serve as a seed source for reestablishing forest vegetation. Within two years after harvest the site will be hand planted with conifer seedlings which will subsequently be surveyed and treated until they are free to grow from brush/woody plant competition.

5. Animal

a. Circle or check any birds animals *or unique habitats* which have been observed on or near the site or are known to be on or near the site:

birds: ☐hawk, ☐heron, ☐eagle, ☒songbirds, ☐*pigeon,* ☐other:
mammals: ☒deer, ☒bear, ☒elk, ☐beaver, ☒other: **porcupine, hare, squirrel**

fish: ☐bass, ☐salmon, ☒trout, ☐herring, ☐shellfish, ☐other:
unique habitats: ☐*talus slopes,* ☐*caves,* ☐*cliffs,* ☐*oak woodlands,* ☐*balds,* ☐*mineral springs*

b. List any threatened or endangered species known to be on or near the site *(include federal- and state-listed species).*

This proposal is located within the range of potential Bull Trout habitat.

c. Is the site part of a migration route? If so, explain.
☒*Pacific flyway* ☐*Other migration route:* *Explain if any boxes checked:*

This proposal is located in the Pacific flyway. Migratory waterfowl also use the Pacific flyway; the area for this proposal is not generally the type of area used for resting or feeding by migratory waterfowl. While migrating through Pacific Northwest forests, many Neotropical birds are closely associated with riparian areas, cliffs, snags, and structurally unique trees. Riparian areas and special habitats are protected through implementation of DNR's Habitat Conservation Plan.

d. Proposed measures to preserve or enhance wildlife, if any:

By designing this sale to comply with the State's HCP, wildlife and wildlife habitat will be preserved and enhanced. The small unit design is conducive to ungulate feeding patterns. Scattered leave tree clumps are favorable to raptor perching, feeding and nesting. Well engineered and built roads reduce potential water quality impacts for down stream fish populations. Grass seeding exposed soils should protect water quality and provide forage. Large diameter leave trees will enhance wildlife habitat value of the future stand. RMZs will protect water quality; provide corridors for wildlife; and maintain habitat for amphibians, and other riparian obligate species.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Does not apply

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

Does not apply.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Does not apply.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

There is a minimal hazard incidental to operating heavy equipment. There is the possibility of fire ignition during the operating period, especially during fire season.

1) Describe special emergency services that might be required.

There are not any special emergency services required at this time. Pump trucks and/or pump trailers will be required on site during fire season. In the event of a lubricant spill the Purchaser will contact DNR and the Department of Ecology.

2) Proposed measures to reduce or control environmental health hazards, if any:

No oil or lubricants will be disposed of on site. Fire tools and equipment will be kept on site during fire season. The cessation of operations may occur during periods when the risk of fire is unacceptably high. In the event of a lubricant spill the Purchaser will contact the DNR and the Department of Ecology.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Does not apply.

2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.

Minimal noise levels associated with logging operations and truck traffic. There should be no long-term impacts.

3) Proposed measures to reduce or control noise impacts, if any:

Does not apply.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? *(Site includes the complete proposal, e.g. rock pits and access roads.)*

Forest Land.

b. Has the site been used for agriculture? If so, describe.

No.

c. Describe any structures on the site.

None.

d. Will any structures be demolished? If so, what?

No.

e. What is the current zoning classification of the site?

Forest Land.

f. What is the current comprehensive plan designation of the site?

Long-term Forestry.

g. If applicable, what is the current shoreline master program designation of the site?

Does not apply.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

No.

i. Approximately how many people would reside or work in the completed project?

None.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Does not apply.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

None.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

Does not apply.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed?

Does not apply.

b. What views in the immediate vicinity would be altered or obstructed?

None.

1) *Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?*
☒*No* ☐*Yes, viewing location:*

2) *Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?*
☒*No* ☐*Yes, scenic corridor name:*

3) *How will this proposal affect any views described in 1) or 2) above?*

It will change from a stand of mature timber to a recent harvest with RMZs adjacent to the type 3 and 4 streams and scattered leave trees throughout.

c. Proposed measures to reduce or control aesthetic impacts, if any:

None.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Does not apply.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Does not apply.

c. What existing off-site sources of light or glare may affect your proposal?

Does not apply.

d. Proposed measures to reduce or control light and glare impacts, if any:

Does not apply.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Informal recreational activities include hunting, berry picking and sightseeing.

b. Would the proposed project displace any existing recreational uses? If so, describe:

Informal recreational activities will be temporarily displaced during logging operations.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None at this time.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

An old railroad grade was identified during multiple field visits on the site. The grade has been recorded with the D.A.H.P. and a site protection plan has been written by a region Cultural Resource Technician.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

See 13.a. above.

c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)

The site has been recorded with D.A.H.P and a site protection plan has been written. In the event that any other archaeological resources are encountered, ground disturbing activities would be halted and our Agency's Archaeologist will be contacted to survey the site and update the Site Protection Plan.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

Hauling will occur on forest roads: D-Line, D-1000, D-1100, Spur 1A, Spur 1B, Spur 1C, D-1200 and the C-Line. These roads are accessed off State Highway 12.

1) Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?

No.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

Does not apply.

c. How many parking spaces would the completed project have? How many would the project eliminate?

Does not apply.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

See A.11.C

1) How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?

This proposal should not impact the overall transportation in the surrounding area.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

Approximately ten to fifteen log truck trips per day and two to four administrative trips per week will be generated until the completion of the timber harvest. After the project is complete, the number of vehicular trips will return to present levels.

g. Proposed measures to reduce or control transportation impacts, if any:

None.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No.

b. Proposed measures to reduce or control direct impacts on public services, if any.

None.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

None.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

C. **SIGNATURE**

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by: Adam Watson Forester 1 Date: 6/3/09
Title

Reviewed by: Robert W. Johnson PRODUCT Sales MANAGER Date: 6/12/09
Title